

DP-311163

TUMBLE CONTROL VALVE HAVING A BOTTOM PIVOT

5 ABSTRACT OF THE DISCLOSURE

A tumble valve for variably impeding air flow in a manifold runner of an internal combustion engine. The valve includes a pivot-shaft located at or in a wall of the runner. The runner is rectanguloid in the region of the pivot-shaft, as is a damper
10 attached along one edge to the pivot-shaft. In closed position, the valve creates a desired degree of tumble in air flowing through the runner, but in open position the shaft and damper lie against the runner wall. The improved valve thus causes no air flow restriction when the valve is open. In any partially-closed position, the lower area of the
15 runner is always blocked because the valve pivots from below, and all air is forced up and over the upper edge of the damper. Fuel efficiency is optimized over an increased range of engine speeds.